



**Safety Products**  
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October 1, 2007

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State Fire Marshall  
The Commonwealth of Massachusetts  
Department of Fire Services  
PO Box 1025 – State Road  
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Thomas G. Gatzunis  
Commissioner of Public Safety  
The Commonwealth of Massachusetts  
Department of Fire Services  
PO Box 1025 – State Road  
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Re: Meeting to discuss recent research into smoke alarm performance and smoke characterization study.

Gentlemen:

This letter is in response to your letter dated September 13, 2007 requesting participation in an October 11 meeting to discuss smoke alarms. We understand that your organizations have a growing interest in this important topic. We applaud your interest in fire safety and your determination to keep Massachusetts abreast of important public safety issues. However, we are concerned that some of the information and proposed actions on this topic could be premature and have significant unintended consequences.

Your October 11 meetings conflict with previously scheduled sessions of the National Fire Protection Association [NFPA] Section 72 working group. This standing group of experts from various organizations works to achieve consensus views and recommendations on various matters related to fire safety. Your meeting, unfortunately, will not benefit from participation by some of the best informed and involved experts in dealing with these matters. We would like to submit the information in this letter for your consideration.

Maple Chase Company, a component of Invensys Controls, is the manufacturer of FireX® brand smoke alarms, carbon monoxide alarms and related safety products. Our company has a history of participation in the National Fire Protection Association (NFPA) and similar industry initiatives. We encourage active efforts to promote the use of smoke and carbon monoxide alarms to improve public safety. In the Commonwealth of Massachusetts, Maple Chase recently participated in work that led to the 2005 passage of Nicole's Law, requiring the widespread installation of carbon monoxide alarms in residences. We also participated in regular meetings with the State Board of Fire Regulations and the State Fire Marshal's office, lending our expertise as they developed regulations to implement the new law.

Maple Chase is not a proponent of any particular smoke alarm technology. Maple Chase manufactures both types of alarms, as well as dual sensor alarms that combine both technologies in a single

unit. Maple Chase alarms meet the consensus performance standards developed by Underwriters Laboratories (UL) and adopted by various national, state and local building codes and recommendations.<sup>1</sup>

The National Institute of Standards and Technology (NIST) describes residential smoke alarms as “the greatest success story in fire safety in the last part of the 20<sup>th</sup> century.” Over 90% of alarms installed in the United States are ionization-type. There is ongoing discussion about performance differences between ionization and photoelectric detector technology. However, the substantial body of testing and professional literature in this area supports the use of either type of technology. For example, according to a 2004 report issued by NIST based on full-scale fire tests in actual homes, alarms using either technology, if installed on every level of a home, generally provide the necessary escape time for different fire types and locations.<sup>2</sup>

Opponents of ionization technology point out that photoelectric devices may sense smoldering fires earlier than ionization alarms. However, they often fail to note that ionization alarms generally provide the earliest detection of rapidly developing, fast-flaming fires. NIST has recently explained that the additional margin of safety provided by photoelectric alarms in a smoldering fire context may not be any more significant than the advantages of an ionization alarm in a flaming fire context. This is because the threat from a smoldering fire grows much more slowly than that from a flaming fire, such as a Christmas tree fire, where conditions deteriorate very rapidly and ionization alarms are known to respond more quickly.

It is widely acknowledged, even by opponents of ionization type alarms, that they provide an important life-saving benefit to the public. Some of these opponents have acknowledged in sworn testimony that ionization alarms provide a public safety benefit, are responsible for saving many lives, and that ionization alarms respond more quickly than photoelectric alarms to rapidly developing fast-flaming fires.

At present, both UL and NFPA are independently evaluating recent research to determine what, if any, changes in current product and installation standards might be called for. The Standards Technical Panel of UL 217, Smoke Detectors and Alarms, is considering possible changes to the testing and performance standards. A NFPA Task Group chaired by Arthur Lee, Directorate for Engineering Sciences of the US Consumer Product Safety Commission, is investigating possible changes to the consensus standards governing the installation of smoke alarms in residential structures in accordance with NFPA 72, the National Fire Alarm Code. Both the UL 217 and the NFPA 72 Committees are analyzing research undertaken to better understand modern fire hazards resulting from the many changes in materials used in

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<sup>1</sup> The performance of residential smoke alarms has been studied extensively and objectively over the past several decades. Based on information from these studies, UL and the NFPA have developed consensus standards for the performance and installation of residential smoke alarms. All residential smoke alarms, whether using ionization smoke sensing technology or photoelectric smoke sensing technology, must meet the same performance standard and sensing requirements, commonly known as UL 217. Additionally, NFPA 72, which is incorporated by reference in most model and state building codes, mandates the installation, location, performance, inspection, testing and maintenance of fire detection systems, including residential smoke alarms.

<sup>2</sup> Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings, R. Bukowski, *et al.*, NIST Technical Note 1455 (July 2004).

residential settings over the last twenty years.<sup>3</sup> Massachusetts fire officials, including Boston's Deputy Chief Fleming is participating in the study groups convened by both UL and NFPA to address this important and complicated area.

Membership of the pertinent NFPA and UL standards-making committees includes a diverse range of interests and a high level of expertise from the fire safety community. This typically includes representatives from the Consumer Products Safety Commission, industry, building inspectors, state and local fire marshals, consumer organizations, and fire protection engineering experts.

Maple Chase joins others in the fire safety community in actively supporting UL and NFPA to promulgate and continually assess these uniform standards to provide public safety benefits. Maple Chase is participating directly in the NFPA and UL Task Groups. We also support the smoke characterization research undertaken by UL and the Fire Protection Research Foundation (FPRF).

We continue to encourage a thoughtful approach to an important and rather complicated set of decisions. Emotional or one-sided views can undermine public safety objectives. Maple Chase urges you to refrain from acting until the forthcoming recommendations of UL and NFPA's expert technical committees are issued. Any amendments adopted by the UL and NFPA committees will reflect the consensus of knowledgeable and experienced experts in the fields of fire sciences and smoke alarm technology. This information would further inform your understanding of the considerations involved in any such recommendations. On an issue such as this, where public safety is paramount, we are sure you will agree that a careful, well-informed, and reasoned decision is critical.

Maple Chase supports your continuing interest in this important aspect of public safety. We welcome your efforts to promote awareness of the importance of having working smoke and carbon monoxide alarms in every home.

With highest regards,

Dennis J. Crane  
Vice President and General Manager  
Safety Products

cc: Wendy B. Gifford – Invensys [via email]  
Barbara Di Gregorio – MA Department of Fire Services [via email]

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<sup>3</sup> Smoke Characterization Project, Technical Report, Thomas Z. Fabian & Pravinray D. Gandhi, The Fire Protection Research Foundation & Underwriters Laboratories Inc., Project No. 06CA08584, Final Report (April 24, 2007).